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ABSTRACT

This study determined the effects of assigning students from speech classes to one of 14 positive sociometrically determined groups, 14 negative sociometrically determined groups, or 14 randomly determined groups upon individuals' satisfaction with the group and the time needed to solve a specific test problem. All significant differences among the five- and six-person groups showed that individuals in positively oriented groups were more satisfied after solving the problem than those from negatively oriented or randomly assigned groups. Observed differences showed that individuals from random groups were more satisfied than individuals from negative groups. This study indicated that positive sociometric assignment of individuals to problem solving groups produces increased satisfaction. (Author)

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Sociometrics and Group Satisfaction

ABSTRACT

This study determined effects of assigning students from speech classes to one of 14 positive sociometrically determined groups, 14 negative sociometrically determined groups, or 14 randomly determined groups upon individuals' satisfaction with the group and time needed to solve a specific problem. All significant differences with the 5 and 6 person groups showed that individuals in positive groups were more satisfied after solving the problem than those from negative or random groups. Observed differences showed that individuals from random groups were more satisfied than individuals from negative groups. This study indicates that positive sociometric assignment of individuals to problem solving groups produces increased satisfaction.

SOCIOMETRIC CHOICE AS A DETERMINENT OF SATISFACTION AND PROBLEM SOLVING SUCCESS IN DISCUSSION GROUPS

Small group communication has been the subject of much research in various disciplines over the past several years. Speech Communication is one discipline in which interest in small groups has been flourishing. Numerous studies and at least four articles on the status of small group research have appeared in leading speech communication journals within the last three years (Bormann,1970; Gouran, 1973; Larson, 1971; Mortenson, 1970). Although Larson (p. 106) in one of these articles says that "small group research appears to be characterized by an almost random selection of independent variables and an almost random matching up of these with dependent variables," for at least the last three decades the focus of small group research in speech communication has been primarily on decision making and variables attendant to the process.

Gouran (p. 25) points to the importance of satisfaction in problem solving discussion and suggests that some determinents of satisfaction, such as compatability, are well known. Yet as important as compatability and an individual's satisfaction with his group appears to be, few studies have been reported in which attempts were made to place individuals from speech classes into groups according to sociometric choice. Several studies concerned with group satisfaction and group success have been conducted that suggest sociometric status could have a marked effect on the group.

Nearly two decades ago Kelly and Thibaut reviewed some of these studies in the Handbook of Social Psychology (Lindsey, 1954). A later review by Heslin and Dunphy (1964) focused on status consensus and its effect on satisfaction in small groups.

The studies in both of the aforementioned reviews and those reported since then have failed to study effects from clearly arranged sociometric groups. Several studies used sociometric data after the groups' activity or used groups from natural settings, but experimental studies of success and satisfaction where the groups were pre-arranged according to sociometric criteria are scarce.

In one of the few studies using sociometrically determined groups, Scofield (1960) arranged groups of girls from friendship cliques and groups of girls from non-friends of the same age, matched on IQ and grade point average. The problem of generalizing from Scofield's study, however, is two-fold. First he failed to mention specific criteria used to form the two kinds of groups. Perhaps friendly groups were arranged without taking into account the negative choices, thus weakening the group. Second, Scofield did not tell how groups of non-friends were formed. We don't know if groups of non-friends were constructed from negative choices, from lack of positive choices, or from some other criteria.

In one of the most successful programs using pre-arranged sociometric groups--the Care and Share Title I Project in Ontario, California (Randles, 1972)--greater achievement, greater attendance, and less discipline problems were reported when students were assigned to sociometrically determined groups. But even this program did not provide for arranging the group to

eliminate negative relationships, so we are still without clarification of the full effect of sociometric grouping on satisfaction and success. Articles by Fessenden (1958), Smith (1969), and Newburger (1971) are among the few which discuss the use of sociometric techniques with speech discussion groups.

The purpose of the present study was to attempt to determine effects of sociometrically formed groups in regard to satisfaction and success. More specifically, the purpose was to determine the effects of assigning students from speech classes into one of three kinds of discussion groups (1. positive sociometrically determined groups, 2. negative sociometrically determined groups, that is, groups formed by opposite criteria, or 3. random assignment to groups) upon individuals' satisfaction with their group and the time the group needed to solve a problem.

PROCEDURES

One week prior to group activity, eighteen Introduction to Speech Communication classes at the University of Missouri-Columbia (20-25 students per class) were each administered a sociometric test. Each student was asked to list five classmates whom he would prefer to be with in a discussion group. Students were then asked to list classmates whom they preferred not to have in their discussion group. The data were transferred to I.B.M. cards and analyzed with a computer program designed by Cockriel (1971) to clarify sociometric information.

In fourteen of the classes one group of five or six students was structured to ensure full sociometric theory in regard to maximizing the

atmosphere of the group. All of the criteria outlined by Cockriel (1973) were utilized. The criteria are as follows: 1. isolates should not be together, 2. rejectees should not be together, 3. every student should have at least one person in the group that he chose to have in his group, 4. clique members should be dispersed among the different groups, and 5. the stars or high ranking students should be dispersed among the groups as nearly as possible. In addition to the sociometric principles utilized, each group was balanced as nearly as possible for sex. That is, no group was formed with less than two members of the same sex within the group.

In each class where a positive sociometric group was formulated, one group of five or six students was also formed by opposite criteria. That is, the group was formulated in a negative manner in regard to the positive criteria just outlined. Thus, at least one group member was rejected for group membership by at least one other member of the group, etc. Remaining class members were grouped as closely as possible according to positive sociometric criteria, however, data from the remaining groups were not used in the study. Students from the other four classes were assigned to five or six person discussion groups on a completely random basis.

One week after the sociometric data were collected students met in the predetermined groups. Students from all treatment groups (positive, negative, and random) were informed that they were placed in the "best positive sociometric groups possible" to maintain differences in expectations among the groups.

Students were told that they were to work with other members of their group on a specific problem-solving task (Pfeiffer and Jones 1970, pp. 26-31). Twenty-six cards, each containing information to be used in solving the following problem were shuffled and dealt to the group members so that each group member had from four to six cards.

> Pretend that lutts and mipps represent a new way of measuring distance, and that dars, wors, and mirs represent a new way of measuring time. A man drives from Town A through Town B and Town C, to Town D. The task of your group is to determine how many wors the entire trip took. You have twenty minutes for this task. Do not choose a formal leader.

Group members were told that they could share the information orally, but that they must keep the cards in their hands throughout the discussion. Following are samples of the information from three of the cards:

> It is 4 lutts from A to B
>
> There are two mipps to a mile
>
> A dar is 10 wors

The time each group took to complete the task was recorded. After completion of the task, individuals were asked to respond privately to the following questions on a five-point "very satisfied, quite satisfied, neither satisfied or dissatisfied, quite dissatisfied, very dissatisfied" scale: How satisfied are you with your own participation in solving the

problem? How satisfied are you that all group members participated? How satisfied would you be to engage in another problem-solving task with the same group?

Differences between groups on the three questions and time needed to solve the problem were analyzed using one-way analyses of variance and Newman-Keuls a posteriori tests where appropriate. The .05 level was required for significance of all tests.

RESULTS

Analysis of variance of the data from the first question was not significant. That is, there were no significant differences among individuals from positive, negative, or random groups on satisfaction with their own participation in solving the problem. As can be seen in Table 1, mean scores from the groups showed that individuals tended to be neither satisfied or dissatisfied with their own participation.

Insert Table 1 about here

Analysis of the data from the second question was significant. Newman-Keuls a posteriori tests showed that individuals from positive groups were significantly more satisfied that all group members participated than were individuals from negative groups. As can be seen in Table 1, the observed differences between positive and random groups, and between random and negative groups while not significant, were in the expected direction.

Table 1 shows that analysis of data from the third question was also significant. Newman-Keuls a posteriori tests showed that individuals from positive groups would be significantly more satisfied to engage in another problem-solving task with the same group than would individuals from negative or random groups. Another difference while not significant, shows that individuals from random groups would be more satisfied to engage in a problem-solving task with their groups than individuals from negative groups.

As shown in Table 1, there was no significant difference between groups on time needed to complete the task.

DISCUSSION

The first question was designed to determine individuals' satisfaction with their own participation in solving a problem. Based on previous testing, the problem seemed well-suited for its intended use, however, after the groups had solved the problem and completed the questionnaire several individuals expressed the opinion that success in solving the problem might relate positively to one's ability in mathematical reasoning. The existence of such a relationship might explain the failure to find significant differences among the three kinds of groups (positively determined, negatively determined, and randomly determined) for the first question. Of course, it is possible that the way one is assigned to a group makes no difference in one's satisfaction with his own participation in problem solving discussion. Further studies with different kinds of problems are needed before this question can be answered.

The second question was used to determine individuals' satisfaction that all members of their groups participated in solving the problem. This question is important since it reveals the general level of satisfaction and balanced participation within the group. As expected, individuals from positive sociometrically determined groups perceived more participation by all members of their groups than individuals from negative or random groups. Furthermore, individuals from random groups perceived slightly more participation than those from negative groups. In other words, the use of sociometrics to assign people to groups appears to be an important determinent in the satisfaction expressed by individuals that all group members participated in solving the problem.

The third question assesses individuals' satisfaction with their group by asking how satisfied they would be to engage in another problem solving task with the same group. As expected, individuals from positive groups would be more satisfied to work with the same group than individuals from negative or random groups. Also, the observed difference between perceived satisfaction of individuals from random and negative groups indicates that those from random groups would be more satisfied to work in the same groups than those from negative ones. If the assumption is correct that an individual will be more satisfied to participate in an experience similar to one that has been satisfying than one that has not, then the third question should be an effective measure of satisfaction with the problem solving experience.

Success in solving the problem was determined by the time required to arrive at the correct solution for the problem. Admittedly, the use

of time as a measure of success may have been a weakness in this study. The use of a more common criterion of success, group consensus (Kline, 1970, 1972; Kline and Hullinger, 1973), might produce different results. Previous research indicates that a friendly atmosphere, while promoting consensus, actually delays task completion. While there were no significant differences between the groups in regard to time of completion, there were observable differences within the groups that would support the earlier finding. Positive groups were more friendly, talked more, laughed more, and appeared to function in a more cooperative spirit than either the negative or random groups. Negative groups appeared less talkative (several members tried to solve the problems by themselves--a phenomenon not observed at all in the positive groups), and in general displayed animosity not found within positive or random groups.

CONCLUSION

Sociometric grouping was found to have a significant effect on individuals' satisfaction with their groups. Subjects in positively formed sociometric groups were more satisfied after solving the problem than subjects from negatively formed sociometric groups or randomly formed groups. Observed differences showed that subjects from randomly formed groups were more satisfied than subjects from negatively formed groups.

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TABLE 1

DATA ANALYZED

	$\overline{X}$	sd	n
Ques. 1 (F=.37)			
Positive	3.36	1.23	72
Negative	3.34	1.11	68
Random	3.50	1.10	62
Ques. 2 (F=5.66)*			
Positive	4.18	.79	72
Negative	3.72	.88	68
Random	3.84	.85	62
Ques. 3 (F=25.17)*			
Positive	4.71	.54	72
Negative	3.69	1.05	68
Random	3.97	.97	62
Time (F=.17)			
Positive	12.95	4.30	72
Negative	13.14	4.43	68
Random	12.66	5.46	62

* $p < .05$

High $\overline{X}$ indicates high satisfaction on questions 1-3.